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Substitution for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> <i>(use as many sheets as necessary)</i>				<b>Complete if Known</b>	
				<b>Application Number</b>	10/698.828
				<b>Filing Date</b>	10/31/04
				<b>First Named Inventor</b>	GUY M. LOHMAN ET AL.
				<b>Art Unit</b>	2171
				<b>Examiner Name</b>	NOT ASSIGNED
				<b>Attorney Docket Number</b>	ARC920030024US1
Sheet	1	of	3		

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Examiner Signature	<i>Paul Sommerfeld</i>	Date Considered	4/14/2006
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	10/698,828
		Filing Date	10/31/04
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Sheet 2 of 3	Attorney Docket Number	ARC920030024US1	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
PA		L. Amsaleg, M. Franklin, A. Tomasic, and T. Urhan, Scrambling Query Plans to Cope with Unexpected Delays, Proceedings of the International Conference on Parallel and Distributed Information Systems (POIS), Miami Beach, Florida, December 1996, p. 208-219.	
PA		R. Avnur and J. M. Hellerstein, Eddies: Continuously Adaptive Query Optimization, Proceedings of the 2000 ACM SIGMOD International Conference on Management of Data, Dallas, Texas, 2000, p. 261-272.	
PA		R. Ahad, K.V.Bapa, and D. McLeod, On Estimating the Cardinality of the Projection of a Database Relation, ACM Transactions on Database Systems (TODS) v. 14, n. 1, March 1989, p. 28-40.	
PA		D. Donjerkovic and R. Ramakrishnan, Probabilistic Optimization of Top N Queries, Proceedings of the Twenty-fifth International Conference on Very Large Databases (VLDB'99), September 1999, Edinburgh, Scotland, p. 411-422.	
PA		Y.E. Ioannidis and S. Christodoulakis, On the Propagation of Errors in the Size of Join Results, Proceedings of the 1991 ACM SIGMOD International Conference on Management of Data, Denver, Colorado, May 29-31, 1991, p. 268-277.	
PA		Z. Ives, Efficient Query Processing for Data Integration, Ph.D. dissertation, University of Washington, 2002.	
PA		N. Kabra and D. DeWitt, Efficient Mid-Query Re-Optimization of Sub-Optimal Query Execution Plans, Proceedings of the ACM SIGMOD International Conference on Management of Data, v. 27, ACM Press, 1998, p. 106-117.	
PA		G. Lohman, Grammar-like Functional Rules for Represent Query Execution Plan Alternatives, Proceedings of the 1988 ACM SIGMOD International Conference on Management of Data, Chicago, Illinois, ACM Press, p. 18-27.	
PA		V. Poosala, Y. Ioannidis, P. Haas, and E. Shkita, Improved histograms for selectivity estimation of range predicates, Proceedings of the 1996 ACM SIGMOD International Conference on Management of Data, p. 294-305.	
PA		V. Poosala and Y. Ioannidis, Selectivity Estimation without the attribute value independence assumption, Proceedings of the 23rd International Conference on Very Large Databases (VLDB), August 1997, p. 486-495.	
PA		V. Raman, A. Deshpande, and J. M. Hellerstein, Using State Modules for Adaptive Query Optimization, ICDE 2003.	
PA		P. G. Selinger, M. M. Astrahan, D. D. Chamberlin, R. A. Lorie, and T. G. Price: Access Path Selection in a Relational Database Management System, Proceedings of the 1979 ACM SIGMOD International Conference on Management of Data, May 30-June 11 1979, Boston, Massachusetts, p. 23-34.	
PA		T. Urhan, M.J. Franklin, and L. Amsaleg, Cost-based Query Scrambling for Initial Delays, Proceedings of the 1998 ACM SIGMOD International Conference on Management of Data, p. 130-141.	
PA		M. Stillger, G. Lohman, V. Markl, and M. Kandil, LEO – DB2's Learning Optimizer, Proceedings of the 27th International Conference On Very Large Data Bases (VLDB), 2001, p. 19-28.	
PA		M. Zaharioudakis, R. Cochrane, G. Lapis, H. Pirahesh, and M. Urata, Answering Complex SQL Queries Using Automatic Summary Tables, Proceedings of the 2000 ACM SIGMOD International Conference on Management of Data, p. 105-116.	
PA		D.E. Simmen, T.Y. Leung, Y. Sun, Optimizing Database Queries Using Query Execution Plans Derived from Automatic Summary Table Determining Cost Based Queries. U.S. Ser. No. 09/502820 filed 5/18/1999.	

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PA		N. Bruno and S. Chaudhuri. Exploiting Statistics on Query Expressions for Optimization, Proceedings of the 2002-ACM SIGMOD International Conference on Management of Data, 2002, p. 263-274.	
PA		D. D. Chamberlin, M. M. Astrahan, W. F. King et al. Support for Repetitive Transactions and Ad-Hoc Query in System R, ACM Transactions on Database Systems (TODS), vol. 6, n.1, 1981, p. 70-94.	
PA		R. Cole and G. Graefe. Optimization of Dynamic Query Evaluation Plans, Proceedings of the 1994 ACM SIGMOD International Conference on Management of Data, 1994, p. 150-160.	
PA		A. Van Gelder. Multiple Join Size Estimation by Virtual Domains, Proceedings of the twelfth ACM SIGACT-SIGMOD-SIGART Symposium on Principles of Database Systems (PODS), 1993, p. 180-189.	
PA		P. Haas and A. Swami. Sampling-Based Selectivity Estimation for Joins Using Augmented Frequent Value Statistics, Proceedings of the Eleventh International Conference on Data Engineering, March 1995, p. 522-531.	
PA		M. Stonebraker et al. The Design and Implementation of INGRES, ACM Transactions on Database Systems (TODS), vol. 1, n. 3, September 1976, p. 189-222.	

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